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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,702	08/05/2003	Robert Harold Bateman	DEH061	6783

7590 11/03/2005  
DIEDERIKS & WHITELAW, PLC  
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EXAMINER

GURZO, PAUL M

ART UNIT PAPER NUMBER

2881

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/633,702	Applicant(s) BATEMAN ET AL.	
	Examiner Paul Gurzo	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 9/19/05.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-98 is/are pending in the application.
- 4a) Of the above claim(s) 96 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-94, 97 and 98 is/are allowed.
- 6) ☒ Claim(s) 95 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 95 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Zajfman et al. (6,744,042) in view of Buttrill, Jr. et al. (5,569,917).

Regarding claim 95, 042 teaches a mass spectrometer and method a mass spectrometry comprising an ion trap (1) comprising a plurality of electrodes (2A-2H and 3A-3H), wherein in use ions received within said ion trap are trapped in one or more axial trapping regions within said ion trap and wherein in a mode of operation said one or more axial trapping regions are translated along at least a portion of the axial length of said ion trap (col. 3, line 18 - col. 4, line 12 and Fig. 1). They teach that the storage of the ions in the ion trap should be as long as possible to perform measurements (col. 4, lines 13-14). In addition, they teach the first factor in ion storage is the ion velocities in the bunch, which can be adjusted according to any desired velocity (col. 2, lines 5-9 and col. 4, lines 64-67). Therefore, it is obvious that since the ion velocity is a parameter that can be adjusted and the ions have a slower velocity (obviously present to ensure that they remain in the trap for longer periods), thereby teaching on velocity reduction.

In addition to 042 that obviously but does not explicitly teach progressive velocity reduction, 917 teaches ions in an ion trap are compressed in physical space and the velocity is

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reduced. The velocity will continue to be reduced through every collision between the ions and the buffer gas (col. 1, lines 36-45). Therefore, it is obvious that the velocity will be less than or equal to 50 m/s because the ions can collide with the buffer gas as many times as necessary. The combination of the buffer gas collisions in 917 and the velocity parameter adjustment ability in 042 teach on the claimed velocity value. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce ion velocity because a spatially compressed ion cloud having relatively low velocity ions is much better suited to mass analysis than an ion beam dispersed over a much larger volume.

***Allowable Subject Matter***

Claims 1-94, 97, and 98 are allowed.

The following is an examiner's statement of reasons for allowance: the closest prior art of record does not teach or render obvious the claimed spectrometer or method, according to independent claims 1, 94, 97, or 98, having four (or five) or more axial trapping regions created along a portion of the length of the ion trap wherein at the second time at least some ions have traveled from the entrance at least 50% (or 10%) of the axial length of the ion trap towards the exit.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

Applicant's arguments with respect to claims 1-94, 97, and 98 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

Applicant's arguments filed 9/19/05 with respect to claim 95 have been fully considered but they are not persuasive. Applicant argues that the prior art does not teach velocity reduction. However, 917 teaches ions in an ion trap are compressed in physical space and the velocity is reduced. The velocity will continue to be reduced through every collision between the ions and the buffer gas (col. 1, lines 36-45). Therefore, it is obvious that the velocity will be less than or equal to 50 m/s because the ions can collide with the buffer gas as many times as necessary. The combination of the buffer gas collisions in 917 and the velocity parameter adjustment ability in 042 teach on the claimed velocity value. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce ion velocity because a spatially compressed ion cloud having relatively low velocity ions is much better suited to mass analysis than an ion beam dispersed over a much larger volume.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (571) 272-2472. The examiner can normally be reached on M-Fri. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached at (571) 272-2477. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PMG



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